• COLORADO RIVER •

AQUEDUCT NEWS

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

VOLUME XXIV DECEMBER, 1957 NUMBER 12

Work on Expansion Program Goes Forward During 1957

The enormous task of enlarging and extending the Metropolitan Water District's Aqueduct System to bring it to its full delivery capacity was carried foward with satisfactory progress during the year 1957, it was pointed out by Robert B. Diemer, the District's General Manager and Chief Engineer.

Acceleration of the aqueduct's expansion program has been necessitated by continuation of drouth conditions and the record-breaking increases in population and industrial expansion in the Metropolitan Water District service area, he stated.

In reviewing highlights of the aqueduct expansion program now under way, Mr. Diemer stated, it is helpful to keep in mind a few of the important steps in the development of the Colorado River Aqueduct project by the District.

The Metropolitan Water District was organized in 1928, in accordance with provisions of the Metropolitan Water District Act adopted by the State Legislature of 1927. Its primary task during the past 28 years has been the planning, building and financing of an aqueduct system to deliver water from the Colorado River to the cities and areas of the District located on the coastal plain of Southern California.

Engineering studies seeking out the most practicable and economic route for an equeduct from the Colorado River to the Metropolitan Water District area were started as early as 1923 by the City of Los Angeles. This program was taken over by the Metropolitan Water District after it was organized in 1928. In 1931, after thorough study and analysis of more than 50 projected routes, the route that is now followed by the main aqueduct system was selected. A bond issue in the amount of $220 million to finance the initial development of the aqueduct was submitted to the people and was authorized by a ratio of nearly five to one in September 1931.

Work is progressing rapidly on the installation of the third pump delivery line at each of the five pumping plants. Shown here is the first section of 10-foot pipe about to be pulled up the hill to the surge chamber at Gene Pumping Plant. The overall job of installing the third delivery lines is now approximately 30 percent completed.

Actual construction work on the aqueduct was set under way in December 1932. The initial phase of construction deferred the installation of six of the ultimate nine pump units at each of the five pumping plants and the construction of 22 miles of half capacity siphons on the main aqueduct. The five pumping plants, each housing three pumps with a 200 cubic feet per second capacity, were constructed to lift the water a total of 1617 feet. These pumping plants were designed for future expansion, as were many other phases of the aqueduct.

On June 17, 1941 Colorado River water began flowing into Southern California. At the time the $220 million bond issue was voted the District included within its boundaries thirteen incorporated cities in Los Angeles and Orange Counties and it had an area of

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Japanese Official Inspects District Filtration System

A recent distinguished visitor to the Metropolitan Water District was Seizo Shimizu, Chief of the Engineering Division of the Osaka Municipal Water Works Bureau in Osaka, Japan.

Mr. Shimizu's Bureau is engaged in expanding its filtration plant and he has spent two and one-half months touring Europe and the United States investigating modern practices in the filtration and purification of water.

William S. Merrithew, Senior Engineer, conducted Mr. Shimizu through the F. E. Weymouth Softening and Filtration Plant and over some of the District's construction work on the Culver City Lateral. Mr. Shimizu expressed great interest in the clarification basins and the rapid sand filters at the Softening Plant.

Expansion Program

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624 square miles. Today the District includes 82 incorporated cities and large unincorporated areas in the five Southern California counties of Los Angeles, Orange, Riverside, San Bernardino and San Diego. It has an area of 3,018 square miles, a population of more than 6,500,000 and an assessed valuation exceeding $11,600,000,000, Mr. Diemer stated.

During the first fiscal year the Aqueduct was in operation, July 1, 1941 to June 30, 1942, the District delivered approximately 16,000 acre-feet of Colorado River water to its constituent cities and areas. In the last fiscal year of record, 1956-57, the District delivered 543,700 acre-feet.

In 1952 the District embarked on a $200 million expansion program to bring the Aqueduct and its distribution system to their full planned delivery capacity of more than one billion gallons of water daily.

Since that time a large amount of expansion work has been performed and is still going forward. Two additional pumps have been installed at each of the pumping plants as well as the second delivery line. Pumping unit number six is now being installed at each plant and the installation of units seven, eight and nine will start in 1958. Work is also being carried forward on construction of the third delivery line at each plant to carry the water which will be lifted by these units.

In 1954 the second barrel of the San Diego aqueduct was completed and placed in operation. In 1955 the Garvey reservoir in Monterey Park with a capacity of 1500 acre-feet was completed and is now serving as an important part of the aqueduct's distribution system. In the course of the present expansion program scores of miles of distribution pipe lines have been installed and placed in operation to meet the needs of recently annexed areas and the growing requirements of the District's service area generally.

Construction costs for the calendar year 1957 total $28 million. The esti-

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Board Awards Contract On Second San Diego Aqueduct

The District Board of Directors on December 10 awarded a contract for construction of a part of the second San Diego aqueduct section to be built and financed by the Metropolitan Water District. Authorization for the construction of the aqueduct section to a point 5.9 miles into San Diego County was granted by the Board on March 12.

The work just awarded will consist of 12.16 miles of 75-inch diameter pipe line construction in unincorporated territory in Riverside County and will extend from a point about seven miles north of the town of Temecula to a point about five miles south of Temecula.

The contract, in the amount of $5,270,647.50, was awarded to B. J. Ukropina, T. P. Polich and Steve Kral, joint venturers, who were low bidders for the job.

Plans for the District's portion of the new San Diego line call for a diversion point at Cottonwood Avenue. The line will have a capacity of 500 cubic feet per second as far as Auld Valley. From there into San Diego County the capacity will be 250 cubic feet per second. The San Diego County Water Authority will construct the southern portion of the aqueduct to convey the water to the desired location in San Diego County.

For the RECORD

(The following items are noted from the report of General Manager and Chief Engineer Robert B. Diemer, filed December, 1957 covering District operations for November, 1957.)

Colorado River—The water surface of Lake Mead dropped 0.87 feet in elevation to 1181.72 feet above sea level and usable storage decreased to 21,415,000 acre-feet at the end of November. This is 39.7 feet and 5,792,000 acre-feet below the crest of the Lake Mead spillway. The discharge from Hoover Dam during November averaged 16,260 cubic feet per second as compared with 11,370 in October and 9,426 in November, 1956.

Pumping and Power — Hayfield pumping plant delivered 53,355 acre-feet of Colorado River water during November. Pumping at Hayfield was continuous on a 4-pump basis with intermittent fifth pump operation except between November 15 and November 25 when pumping was on a continuous 5-pump basis. The District's share of Parker energy amounted to 25,931,412 kwhrs. all of which was used in the District system. Peak deliveries to and from Edison Company were 110,000 kw and 140,000 kw, respectively.

Weymouth Softening and Filtration Plant—Colorado River water was softened from 357 to 126 ppm of hardness at an average rate of 172 cfs during November. Daily rate of flow varied from 138 to 246 cfs. A total of 10,059 acre-feet of water was treated during the month.

Construction—Progress on construction work on the distribution system was as follows: Schedules 56SC and 57SC (Middle Feeder) the contract is 98 per cent complete; Schedules 58SC and 59SC (Middle Feeder) the contract is 96 per cent complete; Schedule 59A-P (Middle Feeder) the contract is 95 per cent complete; Schedule 62P (Culver City Lateral) the contract is 14 per cent complete; and on Schedules 63P and 64P (Culver City Lateral) the contract is 58 per cent complete.

Pumping Plant Expansion — On installation of Pumping Unit 6 the contract is 77 per cent complete. The contract on Pump Delivery Line No. 3 is 20 per cent complete.

Siphon work on the main aqueduct—Earp to Whitewater—Contracts No. 669 and 672 are 31 per cent and 8 per cent complete, respectively.

Purchasing—Total expenditures covered by 445 purchase orders and 7 agreements were $230,185.

Underground Replenishment Protecting Property Values

Through a new delivery line one hundred thirty million gallons of Colorado River water daily are being released into the San Gabriel River channel for underground replenishment in southern Los Angeles County to sustain and protect the huge property values and investments the people of Southern California have in this area, it was announced this month by Robert B. Diemer, General Manager and Chief Engineer of the Metropolitan Water District.

The area benefited by the new underground basin replenishment has a population of more than one million and an assessed valuation in excess of $1,500,800,000, Mr. Diemer stated. Cities within the benefited zone, he said, are Bell, Bellflower, Compton, Dairy Valley, Downey, Huntington Park, Lakewood, Lynwood, Maywood, Norwalk, Paramount, Santa Fe Springs, Signal Hill, South Gate, Vernon, Whittier, and parts of Montebello, Long Beach and Los Angeles.

The new underground water supply will help sustain these people and values, Mr. Diemer pointed out. To make this water delivery the Metropolitan Water District is now completing a $12½ million aqueduct line extending from a point on its "upper feeder" near La Verne to its Garvey Reservoir in Monterey Park.

Colorado River water being used to replenish underground basins in the southern portion of Los Angeles County and other parts of the Metropolitan Water District is in addition to the water being brought in for day by day consumption in homes, stores and factories in the same areas, Mr. Diemer explained.

"Underlying the coastal plain of Southern California are great underground basins which constitute our best form of water storage," Mr. Diemer said. "Over the years these basins have been badly depleted due to excessive pumping, and there is a dangerous intrusion of salt water from the ocean. The area to be benefited by the new point of water release is the Los Angeles County Flood Control District Replenishment Zone 1. It is bounded roughly by Alameda Street on the west, the Whittier Narrows on the north, the Orange County line on the east and San Pedro on the south."

General Manager Diemer stated that while Southern California is extremely short of water which originates locally, steps have been taken and more are being taken to assure that the Southland is in no danger of drying up and blowing away.

Mr. Diemer pointed out that the underground replenishment program, while not new, can now be carried forward on an expanded scale both in Los Angeles and Orange counties because the pumping facilities at the District's five pumping plants along the aqueduct have been increased. The water which is being released into the San Gabriel River is purchased by the Los Angeles County Flood Control District.

The Los Angeles County Flood Con-

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A large number of Central Basin civic officials recently gathered at the San Gabriel River channel to participate in turning on a valve in a new Metropolitan Water District water line to replenish the depleted underground basins in the southern portion of Los Angeles County with Colorado River water. This water, which is brought to Southern California by the MWD through its Colorado River Aqueduct, is in addition to the Colorado River water being brought in for day by day consumption. Preparing to open the valve which will release the water into the river channel are, left to right, Joseph Jensen, Chairman of the MWD Board of Directors, R. J. Furlong, Mayor of Vernon and President of the Central Basin Water Assn.; Hamilton E. Robinson, President of the Central Basin Municipal Water District; and Robert B. Diemer, General Manager and Chief Engineer of MWD.

Bond Sale Asked

An ordinance which would authorize the sale of $18,000,000 in Waterworks Bonds, Series Two, was introduced and passed its first reading at the December 10 meeting of the Metropolitan Water District's Board of Directors. The ordinance will be presented for adoption at the January Board meeting.

The first series of such bonds, which were authorized by the voters under the provisions of Proposition "W," were sold in July 1957 in the amount of $15,000,000.

Pictured above is approximately 200 cubic feet per second of Colorado River water flowing down the San Gabriel River channel after being released from the Metropolitan Water District's middle feeder line at Ramona Boulevard and Rivergrade Road near Baldwin Park. The water flows down the river channel to the Los Angeles County Flood Control District spreading basins near Pico where it seeps underground to replenish the natural underground basins in southern Los Angeles County which have been badly depleted through excessive pumping. Approximately one hundred thirty million gallons of Colorado River water daily are being released into the San Gabriel River channel.

Underground Replenishment

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trol District first began purchasing water from the Metropolitan Water District for replenishment purposes in 1954. At that time the water was released through a connection on Metropolitan's upper feeder line near La Verne into the Flood Control District's Live Oak Wash channel. Thence it travelled to Puddingstone Reservoir and then down Walnut Creek Wash to the San Gabriel River channel. The new line now in operation delivers the water directly into the San Gabriel River near Rivergrade Road and Ramona Boulevard, thus saving water losses through premature seepage, Mr. Diemer pointed out.

The water is paid for by a five-cent tax levied by the Flood Control District on property within the boundaries of its Replenishment Zone I. It is estimated that $734,300 will be raised through this tax in the coming fiscal year, enough funds to finance the purchase of more than 60,000 acre-feet (19,500,000,000 gallons) of Colorado River water, Metropolitan Water District engineers point out.

Expansion Program

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mated construction costs for 1958 are $50 million.

A contract for the extension of each of the five pump house building superstructures was completed in 1957. The installation of pumping unit 6 was started in January, 1957; was 85 per cent completed at the end of the year; and is scheduled for completion early in 1958. The pumps, motors, and other major items of equipment for pumping units 7, 8, and 9 are being delivered and all deliveries are expected early in 1958. The installation of pumping units 7, 8, and 9 will be placed under contract in February of 1958 and completed in October 1959.

Work was started on the construction of pump delivery pipe line No. 3 in July, 1957, was 30% completed at the end of the year; and is scheduled for completion in January, 1959. The five pumping plants will be at their full ultimate capacity when the construction of delivery pipe line No. 3 and the installation of pump units 7, 8, and 9 are completed.

Construction of the second barrel of 12 miles of 13 foot and 13 foot 6 inch diameter aqueduct siphons was started in June of 1957. Work was approximately 30% completed at the end of 1957 and will be completed in 1958. Completion of this work will bring all aqueduct conduits east of San Jacinto tunnel to full ultimate capacity. Work on the expansion of the aqueduct west of San Jacinto tunnel will be advertised early in 1958.

During 1957 there were 37 miles of pipe lines with diameters of 55 to 79 inches completed on 6 contracts totaling $19 million.

In 1958, 26 additional miles of pipe lines with diameters from 48 to 97 inches are scheduled to be completed on 3 contracts totaling $17 million. In December, 1957 a contract in the amount of $5,270,647.50 was awarded for the construction of 12.16 miles of 75-inch diameter pipe line on the second San Diego Aqueduct. The $9 million enlargement of Lake Mathews is scheduled to be started in 1958.

In addition, the expansion of the filter capacity of the F. E. Weymouth Softening and Filtration Plant is scheduled to start in 1958.

NEWS FROM FIELD AND OFFICE

The final report on the District's 1957-58 Community Chest Campaign from Unit Chairman Rufus Fee shows that District employees pledged more than $5,000 to help support this agency which conducts many services for the community. * * *

George E. (Archie) Archibald, an "aqueducter" during construction days is returning to work for the District as a Resident Engineer on the installation of pumping units Nos. 7, 8 and 9 in the Aqueduct's five pumping plants. He and his wife (the former Margaret Clemens, also a former "aqueducter") have been making their home in New York in recent years. * * *

Rudy Fernandez, Senior Draftsman, and his wife, Mary, have a brand new baby boy. He was born on November 30 at the Kaiser Foundation Hospital and weighed 5 pounds, 2 ounces. He has been named Edward Philip and is Rudy's third child.

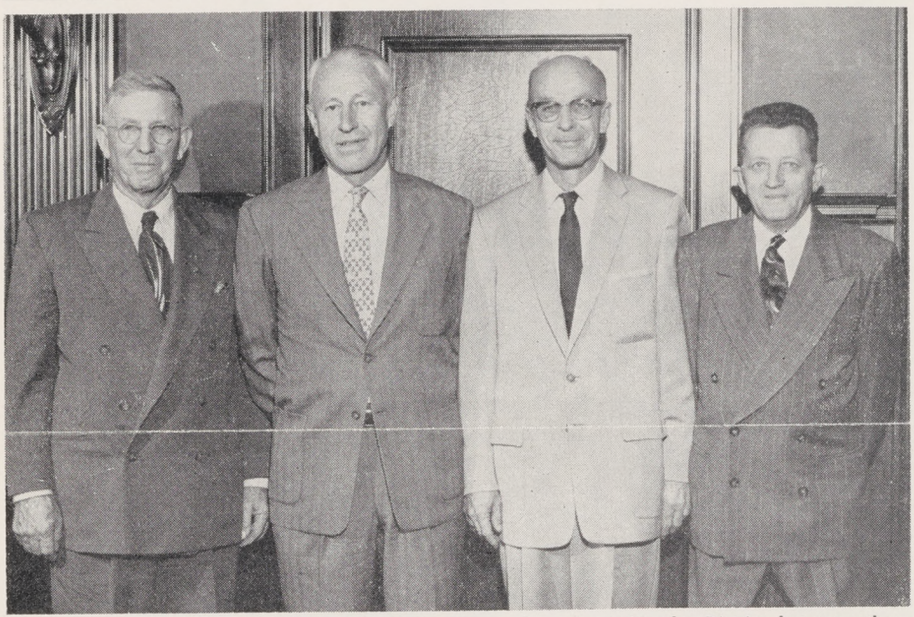
* * *

Patrick Connelly, Engineering Aide, and his wife, Luella, received a special Christmas present in the form of little Susan Irene who was born at Glendale Community Hospital on December 20. She weighed 8 pounds, 13½ ounces.

A number of Christmas parties were held by District employees during the holiday season. Shown above are the winners of the door prizes at the party held for field and office employees at the Pomona Valley Country Club on December 19. Left to right are Joyce Thomas, Mrs. George Cahill, Phil Osborne, Utility Man, and General Manager and Chief Engineer Robert B. Diemer, who accepted a prize on behalf of his grandson, Mike Parker.

In the Los Angeles office, District employees gathered in the basement auditorium on December 24 to celebrate the Christmas season. After lunching on delicious turkey and tuna sandwiches, punch, coffee, cake, and cookies, three door prizes were awarded and everyone joined in singing Christmas carols. Several veteran "aqueducters" from the ranks of retired employees were present.

NEWS FROM FIELD AND OFFICE



These long-time employees have amassed 80 years of service with the District between them. They were each presented with a 20-year service pin at the December 10 meeting of the Board of Directors. Left to right are Larry L. Green, Walter M. Roys, Oliver J. Thompson and Homer R. (Jimmy) Campbell.

Larry L. Green became eligible for his 20-year service pin on November 13, 1957. He first started to work for the District as a Foreman on Aqueduct Maintenance on November 13, 1937. Prior to being employed directly by the District he worked for four years for the contractors on the construction of aqueduct features including roads, Freda siphon, open canal section east of Iron Mountain, and Iron Mountain pumping plant.

In 1942, Larry was placed in charge of operation and maintenance of the main aqueduct from Intake to a point westerly of Indio, exclusive of the pumping plants, with headquarters at Iron Mountain camp. As Superintendent, Aqueduct Maintenance, Larry has the full responsibility of maintaining the first 170 miles of the main aqueduct and appurtenances in good order.

* * *

Walter M. Roys began work for the District in November 1937 as an Electrician during the construction of Iron Mountain Pumping Plant. He became a Station Maintenance Electrician at Iron Mountain in April 1939, Foreman in September 1940, and Station Electrician for Intake and Gene in November 1940. In August 1942, Walt was transferred to Eagle Mountain Pumping Plant where he held the position of Station Chief until October 1955 when he was made Assistant Superintendent of Pumping Plants, the position he now holds.

Oliver J. Thompson first went to work for the District in November 1937 during construction of Intake and Gene Pumping Plants. In 1940 he became a Pumping Plant Operator at Gene and in September 1942 he became a System Operator at Gene, a job which was interrupted by military service from December 1942 until February 1946. Transferring to Eagle Mountain in April 1948, he served as Station Electrician until July 1953, and as Assistant Station Chief until October 1957, when he became Station Chief, the position he now holds.

* * *

Homer R. Campbell came to the District in August 1937 as an Electrician on construction work at Iron Mountain Pumping Plant. He became a Maintenance Electrician at Eagle Mountain in August 1940, and a Station Electrician at Hayfield in November of the same year. In September 1942 he was transferred to Gene Pumping Plant where in April 1953 he became Station Chief at Gene and also Intake Pumping Plants, the position he now holds.

* * *

District employees were granted half holidays on December 24 and 31 by the Board of Directors acting on the recommendation of General Manager and Chief Engineer Robert B. Diemer.

* * *

William Bowlby, Junior Engineer, is convalescing at home following abdominal surgery. Latest reports indicate that he is getting along fine but will be confined to his home for some time.

Another view of the Yuletide party at the Pomona Valley Country Club shows a large part of the group of nearly 200 who attended. Every one there enjoyed themselves immensely. The food was described as excellent and the dance band was good.